

# NOTES

## Report on a Fatal Attack by a Shark

Attacks by sharks on human beings in coastal waters of the United States are rare, and until comparatively recently all known cases were reported from the Atlantic Coast. However, on October 10, 1950, a swimmer at Imperial Beach, California, was attacked and seriously injured by a shark. Although this story was widely printed in the newspapers, no record of it seems to have appeared in any scientific journal. A similar attack, this one fatal, has now occurred in central California. In view of the rarity of such events and the considerable amount of evidence available in the most recent case, it seems proper to report on this latest tragic occurrence at Pacific Grove.

On December 7, 1952, at about two o'clock in the afternoon, Barry Wilson, age 17, of Pacific Grove, was attacked by a large shark while swimming close to shore. His screams, and those of an observer on shore, attracted the attention of his friend, 15-year-old Brookner Brady, Jr., of the Presidio of Monterey, who was swimming close by. Brady immediately swam to the aid of his friend and began to tow the wounded youth toward the beach. Four other swimmers, all members of the Sea Otter Club, a skin-diving group, and all excellent swimmers, were also attracted by the screams and unhesitatingly came to help Brady. These men (Sgt. Earl Stanley, 63rd Military Police Platoon, Fort Ord; Robert Shaw, 313th Criminal Investigation Detachment, Fort Ord; Frank M. Ambrosio, California State Highway Patrol, Monterey; and John L. Poskus, mathematics and physics teacher at the Monterey High School), using an inflated rubber tube to support the unconscious Wilson, brought the stricken youth to shore, where it was learned that death had already occurred.

An unusual circumstance is that John C. Bassford, assistant manager of the Monterey office of the Metropolitan Life Insurance Company, an intelligent observer and himself an enthusiastic skin-diver qualified by experience to judge what was happening in the water, saw the initial attack from an elevated vantage point at a distance of only about 30 yards. Furthermore, three of the participants in the attempted rescue have had extensive police experience and, consequently, training in the accurate observation and

reporting of events of violence. In spite of the frantic excitement of the drama in which they participated, the stories of all the witnesses corroborate one another except in minor and unimportant details. As a result it is possible to make what I believe to be an accurate identification of the shark and to cast a little light on its behavior.

The attack took place just outside the breaker line, about 25 yards off the tip of Point Aulone (locally known as Lover's Point), approximately 36°38' North Latitude, 121°55' West Longitude. The rocky shore at the tip of the point falls off abruptly, and the water at the scene of the tragedy is about 30 feet deep. The temperature of the water was just average for that date and had been slowly falling from 14.1°C. during the previous week; 12.9°C. had been recorded at 9:00 A.M. at the Hopkins Marine Station, about three quarters of a mile to the southeast, and a reading of 12.7°C. was obtained at 6:10 P.M. on the bathing beach at the base of Point Aulone. A rather heavy surf was running to heights of perhaps 8 feet, and the water was rather murky, due to rain runoff from land on the previous night and to a comparatively heavy plankton production, so that the visibility for the men in the water was limited to a distance of 6 or 8 feet. It was an afternoon of intermittent sunshine and cloud shadow.

Mr. Bassford had just moved to an elevated vantage point on the extreme tip of the rocks in order to watch the two boys swimming almost directly below him, when he saw Wilson jerk himself around in the water and peer in all directions. In a moment he noted a look of terror on Wilson's face and then, for the first time, saw the shark approaching the youth on the surface. It struck the boy from in front and heaved him out of the water to the level of his thighs. The shark was probably turning somewhat on its side to strike at the upright figure, since Bassford had the impression of seeing the pectoral fin as well as the dorsal. Wilson, with both hands on the shark's back and pushing at arm's length in an effort to free himself, fell sideward and was immediately pulled under. Bassford feels that the boy was not submerged by the force of his own fall but was inexorably pulled down by the shark. For a moment noth-

ing was to be seen, but soon a gush of blood welled up from below and spread on the surface in a rough circle 6 feet or more in diameter. Within a matter of seconds Wilson reappeared in the center of the bloody patch, screamed for help, and struck frantically at the water with his hands. The shark reappeared at the surface, swam by very close to the youth, showing portions of its back, and then returned from the opposite direction, finally disappearing from the view of people on shore. It is uncertain that the shark actually struck at Wilson on these two passes, but apparently it did return to the attack some minutes later.

Bassford in the meantime had shouted to Brady, who was swimming slightly inshore and some 50 feet away from Wilson, in order to warn him of the danger. Brady, ignoring his own safety, swam at once to the aid of his friend and towed him some 75 or 80 feet before being met by the four members of the Sea Otter Club, who had in the meantime been summoned from a distance of 150 to 200 yards by the shouting. These men, with considerable difficulty, succeeded in passing a rubber tube around the body and under the arms of the inert victim. While they were attempting to do this, the body gave a lunge, furthering their effort. Shaw had such a strong impression that someone had pushed Wilson from behind that he turned around to see who had done it. Seeing no one, he looked quickly down into the water just in time to see the posterior part of the shark disappearing.

With Poskus pulling on an attached nylon rope, Ambrosio and Shaw pushing on either side of the tube, and Stanley supporting Wilson's head in order to keep it out of the water, the men began a struggle through several hundred yards of churning seas to a point in the shelter of a small breakwater pier where a landing was possible. No exact estimate of the time required for that arduous journey is possible, but it must have taken more than 20 minutes. During at least some and probably most of that time the shark patrolled the swimmers but did not strike. At one time Ambrosio became aware of its presence before seeing it, probably sensing the swirls of water caused by its passage. Whenever the swimmers had to stop to rearrange the body which kept slipping from the tube as the group was battered by the breaking waves, the shark was apt to appear. Stanley, Shaw, and Ambrosio all saw it more than once. It is probable that it circled them most of the way to shore, approaching closely whenever it was necessary to halt and being kept at a slightly greater distance

by the agitation of group swimming. It is possible, however, that the approaches and retreats were an illusion resulting from a better opportunity for some of the men to watch for the shark during the halts. The actions of the shark during this period were somewhat similar to those of a man-eater which, after an attack on a boy in Buzzard's Bay, Massachusetts, in 1916, stood off and on in the blood-reddened water only a few yards away during the rescue attempt but made no further attack (Gudger, E. W., *Amer. Midland Nat.* 44(3): 714-719, figs. 1, 2, 1951). They are also reminiscent of the behavior of a hammerhead which, after attacking a girl at Palm Beach, Florida, in 1931, followed his victim and her rescuer close in to the shore but appeared to be kept from making repeated attacks by vigorous thrashing (Gudger, E. W., *Nat. Hist.* 40(1): 417-418, 1937).

It should be mentioned that the movements of the shark were at all times deliberate and leisurely. Neither during the initial attack, nor while making subsequent strikes, nor while conveying the swimmers toward shore, did its speed impress any observer. It made no abrupt lunges and never appeared to be exerting itself.

Wilson was examined by Dr. R. L. Hane a few minutes after having been brought to the pier and was pronounced dead as the result of his extremely severe wounds. While I am reluctant to publish the accompanying photographs of these wounds, I deem it desirable to do so and to describe their general character in order that a graphic record may be readily available for comparison in future instances when swimmers may be attacked by some unknown marine animal. Mr. and Mrs. Clarence Wilson, the parents of the deceased youth, have given me permission to do so.

The body above the hips and the lower right leg were without blemish. The major wound involved the excision of the lower part of the right buttock and practically all the muscles on the dorsal side of the thigh, almost to the knee. Although no bones were broken, the lower part of the ischium was laid bare, and the femur was exposed for about three quarters of its length. The femoral artery was severed, and shock and loss of blood from this wound alone would have caused death in a very few minutes. This wound also involved most of the lateral and medial surfaces of the thigh, so that only a narrow strip of skin about 3 or 4 inches wide on the front of the leg was undamaged. The lateral margin of the wound was ragged and characterized by ribbon-like pendants of flesh,

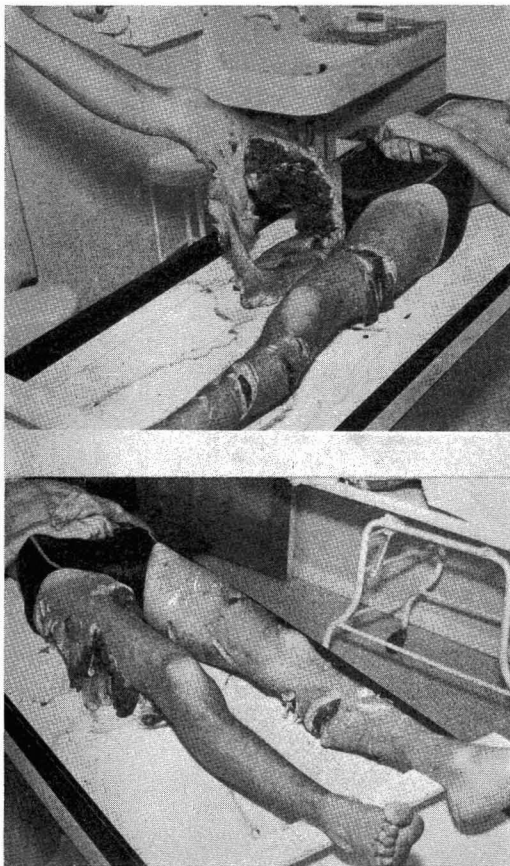


FIG. 1. Fatal wounds inflicted by a shark thought to have been *Carcharodon carcharias* (Linnaeus).

but the medial border was sharp as if cut by a knife, and the line of incision was continued by a series of equally spaced triangular cuts. An extensive festoon of skin and subcutaneous tissue connected the anterior and posterior limits of the wound dorsally. This makes it impossible to believe that the wound was inflicted by a single strike but suggests the probability that two attacks, one primarily from the medial surface and the other from a dorsolateral direction, impinged upon each other. It is significant that Stanley and Shaw, who were the first to reach Brady struggling with his burden, both saw the wound in the water and were of the impression that it was not as severe as it appeared on landing. This lends credence to the belief that the shark struck Wilson later while he was being placed in the tube and was almost surrounded by swimmers.

Additional wounds marred almost the entire

left leg. The anterior and lateral surfaces of the thigh bore a wide and ugly transverse cut which extended to the bone. Similar but somewhat smaller gashes cut across the calf and shin. Some of the more superficial markings appear to me to provide better evidence of the nature of the attacker than do these more conspicuous wounds. They were of three general types. Several linear lacerations, up to about 4 inches long and probably not more than  $\frac{1}{2}$  inch deep, looked like razor slashes and could be interpreted as caused by shark's teeth slitting sideways through the flesh. A number of comparatively superficial gashes, several inches long and about an inch wide and pointed at one end, could have been made by shark's teeth which were not biting deeply and were slipping through the skin longitudinally. Most significant were a few inconspicuous wounds on the left leg, each in the form of two superficial cuts meeting at an angle like the legs of an almost equilateral triangle a little over 1 inch on a side. These appeared to me to be the imprint made by the teeth of a shark which was gently mouthing instead of biting its victim. Unfortunately, they do not show on the photographs. No clear imprint of the jaws was visible, but the area of laceration on the left thigh was rather sharply defined and about 10 inches wide.

The number and character of the wounds suggest that Wilson was bitten at least four times, and the corroboratory evidence of the witnesses indicates the sequence: first, on the lower left leg from behind, which strike wounded and startled him; second, on the medial surface of the right thigh, when the shark approached him from in front and, passing partially between his legs, lifted him high out of the water; third, on the upper left leg from the back and side, when Wilson struck in desperation at the water; and, finally, on the back and side of the right thigh, while he was being placed in the tube and when he was undoubtedly already dead.

At first there was some question on the part of the police, the coroner, and the general public as to the sort of animal responsible for the attack. Barracuda, sea lions, killer whales, and even porpoises were suspected. However, all the people who witnessed the actual attack or saw the animal while participating in the attempted rescue state unequivocally that it was a shark. Three professional ichthyologists, J. B. Phillips of the California Department of Fish and Game, Robert W. Morris of the U. S. Fish and Wildlife Service, and myself, viewed the body. Although

without previous experience in such matters, it is our unanimous opinion that certain of the wounds, particularly the sharp thin slashes and the triangular cuts, could not have been made by the teeth of a sea lion, whale, or porpoise, but that they are definitely of the type that might be expected to be produced by the dentition of a shark. It should be mentioned that the California barracuda is extremely rare in the area and is of comparatively small size, reaching a length of only about 4 feet and a weight of 10 to 12 pounds. It is inconceivable that this fish could have been responsible for the major wound of the right leg. Later, Dr. Paul E. Messier also viewed the body and pronounced the wounds to be identical in character with those which he had observed some years ago in two cases of shark attack in the tropical Pacific.

In a forlorn attempt to capture and definitely identify the shark, the research vessel "Tage" fished for it next day in the adjacent area while several people tried their luck from shore. Although these efforts were unsuccessful, a considerable amount of evidence supports a tentative specific determination. Shaw had a good although brief view of the shark's tail and described it as tuna-like, with a spread of about 3 feet and with the upper lobe a little longer than the lower one. The accuracy of his observation is indicated by the fact that he also noted a small flap-like structure on the back in front of the tail but stated that this was not the dorsal fin. At the time I questioned him, he did not know that the shark had the small second dorsal of which he gave such an adequate characterization. Shaw's description, supported by that of others, fits the caudal fin of the families Lamnidae and Cetorhinidae but of no others. The sluggish, plankton-feeding *Cetorhinus maximus*, which has never been suspected of such aggression, is at once ruled out as a possible offender. The color, unanimously stated to be light and variously described as grayish or brownish merging into white underneath, does not fit either *Lamna ditropis* or *Isurus glaucus*, the only other members of the Lamnidae known from these waters, but points the finger of guilt directly at *Carcharodon carcharias*. The suspicion is further

strengthened by the broad apex of the triangular wounds. These marks matched closely the shape of the teeth of *Carcharodon*, but I do not believe they could possibly have been made by the much narrower teeth of *Lamna* or *Isurus*. The most common large shark seen in the area is *Prionace glauca*. By a stretch of the imagination the wounds, although they showed no concavity of one border, might possibly be interpreted as having been inflicted by the teeth of this species. However, the striking blue color of the dorsum and the great disparity in the length of the caudal lobes of *Prionace* vary widely from all the reported observations. Finally, when it is recalled that *Carcharodon* is so notorious for unprovoked attacks on humans that it has gained the common name of man-eater and that, although uncommon along the California coast, specimens of this species have previously been taken in Monterey Bay and even as far north along the coast as Westport, Washington (Bonham, K., Copeia 4: 264-266, figs. 1-7, 1942), there is comparatively little doubt that this shark was responsible for the attack. All the evidence available tends to incriminate *Carcharodon* and to absolve the other possible suspects.

Estimates of the size of the shark vary from about 8 feet to 15 feet, or even more. The size of the toothmarks, the width of the gape as indicated by the dimensions of the lacerated area of the left thigh, the estimated spread of the tail, all indicate a length of approximately 12 or 13 feet, but this estimate may be more than 10 per cent in error.

I find it impossible to close this report without recalling to the reader's attention what must already be abundantly clear: the outstanding courage of the five young men who made the rescue attempt. How Brady could have deliberately gone into the circle of bloody water to succor his friend and how the other men could have persisted in the slow and laborious task of supporting and carrying their lugubrious burden for more than a quarter of an hour while a known deadly killer circled within a few feet of them surpasses all understanding.—Rolf L. Bolin, Hopkins Marine Station, Pacific Grove, California.